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INSTITUTION MEETING, 1946

WE said last week that our intention was to give our readers a balanced view of what would take place during the 83rd Annual General Meeting of the Institution of Gas Engineers. This we hope to do in the following pages.

The meeting was held at the Institution of Civil Engineers in London. It started on June 4, the business sessions ended on June 6; interspersed with the technical agenda was a series of social functions and works visits. This meeting was the first since the outbreak of World War II to fall into line with what the Institution had become accustomed to in the pre-war years. In the past—and we are thinking of the pre-war years—we have spoken of crowded meetings, but never in our recollection has there been a more crowded meeting than that of Institution Week, 1946. Colonel Croft, the President, had a great duty to perform, and he carried through his responsibility in exemplary fashion.

At the start, the President said how pleased and honoured the Institution was, for the first time since the termination of the war, to have so many distinguished foreign visitors. He mentioned the names of the official delegates, which we are glad to include in these notes:

From the American Gas Association, Messrs. S. J. Beale and W. C. Philpot; Belgian Association of Gas Engineers, M. V. Timmermans, P. de Halleux and R. H. Touwaide; Canadian Gas Association, Mr. W. C. Philpot; Czechoslovakian Gas Association, Dr. T. Keclik; Danish Gas Association, Mr. A. Rusmussen; French Gas Association, Ms. A. Baril, P. Germain, P. Mougin, H. de Richemont, B. de Comminges; Netherlands Gas Association, Prof. G. A. Brender à Brandis; Norwegian Gas Works Association, Mr. J. C. Irminger; Swedish Gas Works Association, Mr. C. W. Pilo; and the Swiss Gas and Water Association, Dr. H. D. Deringer, Lt.-Col. W. Leopold and Col. H. Zollikofer.

Then the President welcomed certain Overseas Members, Messrs. H. D. Greenwood of the Control Commission for Germany, D. V. Lockey of Jamaica, G. E. Monson of Calcutta, L. F. Nicholson of Colombo and J. K. Simpson of Shanghai.

The President of the Institution.

In mentioning these names, Colonel Croft said that last December, the Secretary and himself had visited Paris and had had the pleasure of meeting several of them. He hoped that the Institution Meeting as a whole would be very pleasurable to them. Monsieur A. Baril, Paris, speaking in French, expressed his appreciation of the kind welcome which had been given to the Overseas visitors.

Mr. W. C. Philpot, of Toronto, then spoke, extending the good wishes of kindred associations from the other side of the Atlantic. He brought with him greetings from the President and the Board of Directors and the members of the American Gas Association.

Messages from Overseas

The Secretary, Dr. W. T. K. Braunholtz, at this stage read out cables and telegrams which had been received from the American Gas Association and from the Director General of the new official organization of the nationalized French Gas Industry. From the American Gas Association came the following cable: "President and Officers of American Gas Association send best wishes and fraternal greetings," and from Major Alexander Forward, who is well known to many members of the Institution, not only from his visit to our own country, but also through the visit of the Institution to America; and who also is an Honorary Member of the Institution: "My inability to attend this Meeting is much regretted, and I take this opportunity to express my wishes for a very successful and enjoyable occasion and to send to my brother members my best regards." M. Réclus, President and Director General of the Gaz du France, telegraphed: "I am happy to address to you in the name of the Gaz du France and your French colleagues, very cordial greetings and best wishes for success. Regret am unable to attend meeting in person but our delegation will bring you officially on behalf of the new French organization an expression of friendly greeting."

Following the President's announcement of the new publication, The Gas Industry Overseas, 1939-1945, and the confirmation of the minutes of the General Meeting of the Institution held in London June last, and of the Research

Meeting held in November last, the President moved the adoption of the report of the Council for 1945-1946, and the accounts for the year 1945. This resolution was adopted unanimously.

Election of Officers

The announcement was then made of the election of Officers, Auditors and Members of Council: As President, 1946-47, George Charles Pearson, O.B.E., Engineer-in-Chief, City of Birmingham Gas Department; as Vice-President, 1946-48, Edward Crowther, M.Eng., Chief Engineer and General Manager, Newcastle-upon-Tyne and Gateshead Gas Company; as Auditors, 1946-47, Harold Charles Smith, C.B.E., D.L., J.P., Managing Director, Tottenham and District Gas Company, and Alfred Morland, F.C.A., Wood, Drew and Company, Columbia House, Aldwych, London, W.C.2; as Hon. Secretary, 1946-47, John Terrace, 16, Fountain Court, Lawrie Park Road, London, S.E.26; and as Members of Council, 1946-49, Cecil Horace Bamber, B.Sc., Engineer and Manager, Rochdale Corporation Gas Department, John Horsfall Dyde, M.Sc., Engineer and General Manager, Uxbridge Gas Company and Slough Gas and Coke Company; Alexander Jamieson, Engineer and Manager, Johnstone Corporation Gas Department; and Joseph Frederick Rust, Engineer, Newport Gas Company, Monmouthshire.

District Members of Council

H. L. Adams, of Tipperary, Irish; O. P. Cronshaw, of Rhyl, Wales and Monmouthshire; G. E. Currier, of Bradford, Manchester; B. W. Dawkins, British Junior Gas Associations Joint Council; J. M. Dow, of Paisley, North British; F. N. Howes, of Chelmsford, Eastern; H. Robinson, of Annan, Waverley; F. L. Scaife, of Stockton-on-Tees, North of England; J. H. Wainwright, of Halesowen, Midland; and J. M. Webber, of Croydon, Southern.

Presentation of Medals

This brought us to the presentation of the Institution Medals for 1945. These were: Institution Gold Medal, 1945, awarded to L. W. Andrew, B.A., B.Sc., M.Inst.Gas E., E. W. B. Dunning, B.Sc., M.Inst.Gas E., and G. C. Holliday, B.A., M.Inst.Gas E., for Joint Paper on "Technical Aspects of the Gas Industry's Contribution to Post-War Housing," read at the 82nd Annual General Meeting of the Institution in London, on June 12, 1945. The H. E. Jones London Medal, 1945, awarded to G. U. Hopton, B.A., B.Sc., A.M.I.Chem.E., and R. H. Griffith, B.A., D.Phil., for a Joint Paper on "The Removal of Hydrogen Sulphide from Fuel Gases," read at the 11th Autumn Research Meeting in London, on Nov. 27, 1945. The Institution Silver Medal, 1945, awarded to J. H. Chapman for a Paper on "More Thoughts on Post-War Planning," read at the Annual Meeting of the Wales and Monmouthshire Association of Gas Engineers and Managers on May 17, 1945. The Institution Bronze Medal, 1945, awarded to James Palser for his Paper on "The 'C.C.' Burner. Developments in the Application of Town Gas to Industrial Heating Processes," given to the Midland Junior Gas Association on Nov. 8, 1945.

Presidential Address

Colonel Croft then delivered his Presidential Address. This was published in last week's "JOURNAL" *in extenso*. Proposing a vote of thanks to the President, Colonel H. C. Smith said that the President had referred to a proposed change in the structure and operation of the Gas Industry. They had passed through a long and weary war, and he thought that they were entitled to say that the Industry had emerged with flying colours. There had been Government control, yet despite all the difficulties due to lack of labour, lack of materials and so on, the Industry had satisfied in full measure the demands made upon it. "Gas," he said, "has been available in consumers' houses by the simple turning-on of a tap, without the consumer standing in a queue at some office of a local authority to get a ration card or a coupon with which to buy gas. Why is it," he asked, "that the Gas Industry has been able to put up this performance? I say that it is mainly on account of the technical skill and the devotion to duty of the members of this Institution. It is through their skill and devotion to duty and their leadership and, as automatically followed, the devotion to duty of the workpeople engaged in the industry, and I find it very difficult, after reviewing the performance of the Industry during this war, to see any justification for a drastic change in the structure of the Industry. I do submit that there is not an atom of evidence at the moment to justify such a change. The President has referred to the Heyworth Report—a very interesting document—but we must remember that that Heyworth Report was produced during the war years. It was produced by a Committee of very eminent men in different walks of life. Many members of this Institution, in their various capacities, gave evidence before that Committee but everybody, whether they were giving evidence or were engaged as members of the Committee, had an important job of work to do in war production and I am perfectly certain that nobody had the proper time carefully to sit down and plan a change in the future of the Gas Industry. I cannot criticize or discuss the Heyworth Report, but I do know this; that not one member of this Institution would recommend the erection of a new works or a new plant on such scanty evidence as it is suggested should bring about a change in the future organization of the Gas Industry. As engineers we are accustomed to weigh the problem thoroughly, and, personally, I am not satisfied that such consideration has been given to the proposed changes in this Industry.

We, in the Institution, as the President has said, are entirely non-political, and perhaps in that way we are in a different position from that of other national bodies in the Industry. We do know that in the other national bodies, at the present time, political influences will naturally be at work and that votes may be cast in favour or against the nationalization of the Industry by people who have not been interested in the Industry for more than a few months. But we have been interested in the Industry, most of us, throughout the whole of our working lives, and I think we are entitled to say what we think about any proposed changes.

Concluding, Colonel Smith said: "We all know of the keen and vital interest which the President has taken in education and training. It is a most important matter and one upon which the successful future of the Industry depends.

The vote of thanks was seconded by Dr. Harold Hartley, who suggested that members of the Institution of Gas Engineers would have a major part to play in the great development of the Industry which was envisaged.

High-Pressure Gas Holders

This brought us to the presentation and discussion of a Paper on High-Pressure Gasholders by Mr. G. M. Gill, which Paper reviewed the considerations affecting the installation of high-pressure gasholders in Great Britain. The Author described the technique adopted in a number of gas-works, and put forward a case for the modern holder of comparatively small dimensions. He said that it was impossible, in the light of limited experience, to give detailed analyses of installation and operational costs, but he suggested that there was sufficient information in his Paper to show that this pressure holder is a proposition attractive economically and also technically. In co-operation with Mr. N. B. Thompson, pioneer of the installation of the first high-pressure gasholder in this country, which was erected at Skipton in 1932, the Author explained that this vessel had a capacity of 250,000 cu.ft. at 50 lb. pressure, and was of cylindrical shape, 102 ft. long by 32 ft. diameter. At that time it was necessary to obtain the consent of three Government Departments to this installation, as a holder of such size was then a novelty in

this country, although many were in use in other countries, notably in the United States of America.

At Skipton the high-pressure holder was required not only to augment the existing low-pressure storage capacity, but also to act as a storage vessel while the large gasholder was put out of commission for overhaul. It was further required to supplement the supply of a growing district.

It was originally proposed to construct this holder with internal framework attached to the shell, but, following experience in America, this design was altered whereby no internal framework of any kind was attached to the inside of the vessel, such support being confined to the use of circular-shaped and independent framework, termed "spiders," with a diameter slightly less than the cylinders and maintained vertically by means of angle-iron cleats riveted to the cylinder. The object of these spiders was merely to support the cylinder in its circular shape when it was empty, as otherwise it would be liable to sag if unsupported. The holder was supported on one fixed cradle, while the remaining cradles were supported on rollers, so allowing the cylinder to expand and contract without throwing any strain upon the vessel.

The President's Luncheon

The meeting was then adjourned for the President's Luncheon, which was held at the Savoy Hotel, the principal guest being the Minister of Fuel and Power, Mr. Shinwell. A full report of the speeches at this function, which was attended by nearly three hundred members of the Institution, kindred Institutions both at home and overseas, Government departments, Universities, and other public men, is given in our issue to-day. The Minister stated categorically that the Government intended to take over the Gas Industry "lock, stock, and barrel." Whether the Industry was put under the big umbrella of private ownership or under the banner of national ownership, he continued, it would be a very foolish National Gas Board that would refuse to avail itself either of the existing personnel or of the personnel of the future, which was likely to be more skilled in technical knowledge because of the emergence of modern conditions. To our mind, the latter sentence has considerable significance. This is the first time reference has been made to the establishment of a National Gas Board. Mr. Shinwell gave no further definition, apart from this broad and general statement.

Question Time

Following the President's Luncheon, the meeting was resumed for "Question Time," a popular feature innovated last year, and which proved equally popular at last week's meeting. We shall be publishing a report of this in a subsequent issue of the "JOURNAL."

The President's Reception

The President's Reception was held on Tuesday evening at Grosvenor House, Park Lane, and we were impressed by the pervading atmosphere of great goodwill. It was undoubtedly unfortunate that so many members of the Institution and their wives were unable to attend this very pleasant social function. In view of the increasing importance of the Institution and of the increased membership, the question of adequate arrangements for future gatherings to accommodate properly the number of people who wish to attend this high-light of Institution Week should be considered.

Development of a Gas Grid

The meeting was resumed on Wednesday morning, the first item on the programme being the presentation by Mr. W. Hodkinson and Mr. H. B. Taylor, of a Paper on "The Development of a Gas Grid." This Paper dealt with the integration of gas supply, with particular reference to those considerations which the Authors maintained should form the basis of any soundly conceived grid system. The Authors correlated general principles with their personal experience in a particular scheme, and used the West Yorkshire Gas Distribution Company and its grid, present and projected, to illustrate their points. These points ranged from the factors which basically affect layout of a grid to the general condition of production in grid schemes. The Paper dealt with the economics of administration of grid, and a survey was made of costs, the influence of legislation, construction, and financial servicing charges.

Commercial Uses of Gas

Following a meeting of the contributors to the Benevolent Fund of the Institution, we had a Paper on "Commercial Uses for Gas" by W. Johnson, Industrial Engineer, and W. F. Moore, Assistant Industrial Engineer, Wandsworth and District Gas Company. In this Paper, the Authors defined in general terms what they thought was implied by "Commercial gas usage," and they went on to discuss sales methods in relation to commercial gas supply. They analyzed treatments of trade, and the processes used in four trades which are responsible for bulk consumption of gas —namely, bread-baking, fish-frying, hotel and restaurant services, and hairdressing. Their discussion was then developed on the uses of gas for the provision of hot water and for space heating in commercial premises. The final part of the Paper was devoted to definition and advocacy of promotional tariffs to increase sales of gas within particular trades, making varying peak load demands upon the Gas Industry.

Visits of Interest

As in pre-war days, the afternoons of Wednesday and Thursday were devoted to visits of interest to members. On the Wednesday, the works of Lines Brothers, Ltd., at Morden, and the Harrow Works and the Fulham Works and Laboratories of the Gas Light and Coke Company, constituted part of the programme, while there was a ladies' visit to Hampton Court Palace. We shall refer to these later. The visits on Thursday afternoon were to the works of the General Electric Company, Ltd., at Wembley, and to the works of the Wandsworth and District Gas Company. On Friday, there was a whole-day trip by river to Windsor.

A Two-Fuel Industry

On Thursday morning, we were sharply reminded by Mr. P. C. Gardiner, of the Tottenham and District Gas Company, that our Industry is a two-fuel industry, and that it must pay very great attention to its solid fuel production.

In this Paper the Author reviewed the many factors which affect the preparation of coke. Mr. Gardiner pointed out that practically all gas cokes are acceptable for industrial uses, such as firing boilers and furnaces, but that only the most reactive varieties are completely satisfactory for urban fires. He went on to say that hard coke as well as gas coke is suitable for most industrial purposes, whereas only gas coke and low-temperature cokes are sufficiently free-burning for acceptable domestic use. The limited supply of coke of light bulk density, for which there is an expanding market, makes it very advisable to devote special attention to the production of light coke in gas works, the denser variety being produced in great quantities at coke ovens. A great deal of attention has been devoted to coke grading and the development of special coke-burning grates; in both cases with conspicuous success. Although successful, the efforts expended in the design and installation of special coke grates can be regarded as an acknowledgment of the unsuitability of the coke for open fires.

The Author's theme was that it should be our aim to produce a coke which is thoroughly suitable for all purposes and, in so far as this is not practicable, to concentrate on the most remunerative quality. The higher prices ruling for domestic coke make its production very attractive, particularly as it is, also, usually the best for almost all other purposes. All efforts in gas-works, such as dry cooling, steam

quenching, scalping, cutting and grading have beneficial results, but they cannot possibly produce a free-burning coke from a coal of high rank. The origin of the coal is, therefore, fundamental. In this connexion, it must be appreciated that high-rank coals produce dense cokes suitable for furnaces, whereas low-rank coals give free-burning cokes suitable for domestic fires. Thus, the best gas-making coals produce cokes of limited usefulness, whereas low-rank coals of poor gas-making quality usually give an excellent all-purpose coke. These opposing interests are the root cause of the majority of coke problems.

Mr. Gardiner said that next in order of importance is the carbonizing plant. This, he maintained, also, has a profound effect upon the coke, and, unfortunately, continuous vertical retorts, from which the lightest coke is made, are not necessarily the best from a gas-making point of view. Together, the rank of the coal and the carbonizing plant determine the bulk density of the coke, and this is the most significant single factor in gauging its quality. Besides the more fundamental characteristics of the coke which give it its bulk density, suggested means of reducing the water and ash contents were set out in the Paper with emphasis on the duty to wash coal at the colliery. Attention was drawn to the necessity for grading, and to the advantages of the country-wide acceptance of the London and Counties Coke Association sizes which have proved so efficacious. Some details were given of two types of screening plant differentiating between the treatment of coke from unwashed coals and coke from washed coals.

Details were given of a standard coke fire test, for domestic coke, which has proved very satisfactory over a number of years. Many relevant facts were recorded, the most significant figures being the quantity of gas required for ignition, and the rate of burning. The activation of coke by treatment with alkali was referred to, and this development deserves the greatest encouragement. The Liverpool experiments, he said, were very successful so far as they went, but it is of vital importance that means be found to activate adequately the denser cokes made in horizontal retorts from Durham coals, which are so useful from a gas-making point of view. Success in this respect would be practically a complete answer to all coke problems in the Author's opinion.

Separation and Chemical Utilization of Coal Gas Constituents

The final Paper was by Dr. N. Booth, of the Gas Research Board, who said it is anticipated that in Great Britain during the next few years there will be a considerable extension of the manufacture of materials such as plastics, synthetic rubber, solvents, refrigerants, anaesthetics, fine chemicals and a wide range of other materials. The substances required as the basis for these synthetic materials are, for the greater part, simple chemical compounds which must be obtained from either coal or petroleum.

Some of the constituents of coal gas, such as ethylene and propylene, are of great importance in this connexion, while recent researches show that others, such as methane and carbon monoxide, may be almost equally valuable in the future. While it is too early to make more than tentative suggestions as to what part the Gas Industry might play in providing raw materials for these new processes, it is considered that the Industry should be acquainted with the general aspects of the subject.

The first requirement is to separate the desired constituents from the other substances present in coal gas. Detailed attention is given to this in the Paper. While liquefaction and low-temperature fractionation are the more likely methods of separating coal gas, diffusion and adsorption cannot be neglected. It is considered doubtful whether hydrogen alone could normally be separated from coal gas at a competitive price, but, if other constituents were being separated as well, then use might be made of the hydrogen. In Section V, it is shown that the only established source of large quantities of methane in this country is in the gaseous products of carbonization. Methane is less reactive than ethylene, but is present in coal gas to a greater extent and might be made in large quantities by complete gasification processes. Detailed information is, therefore, given as to the methods by which methane can be treated.

At present ethylene is the most value constituent of coal gas for chemical syntheses on account of its simplicity and reactivity. The utilization of ethylene has been explored widely, and processes for making 50 different chemicals from ethylene have been taken to the stage at which commercial manufacture could be undertaken, provided that the market demand were adequate. In addition, there are many other processes which might be developed. Propylene is present in coal gas to a smaller extent than is ethylene, but could be separated simultaneously. It is particularly useful in chemical syntheses because it contains 3 carbon atoms and can readily be made to provide valuable compounds containing this number of atoms in the molecule.

Presentation

At the close of Thursday morning's session the President made a presentation to Mr. J. H. Winder, who is retiring from the Institution staff after many years' service. Everybody who knew the Institution of Gas Engineers, said the President, knew an allied institution in the person of Mr. Winder, who started his service immediately after leaving the Army, at the end of the first World War. At that time Mr. Samuel Glover was President, Mr. W. E. Price was filling the jobs now undertaken by Mr. J. Terrace, and Mr. W. T. Dunn was the Secretary. Mr. Winder had been present at every annual general meeting and special meeting since that time, and now felt it was time to retire. In handing him a cheque he wished him many years of happy retirement in full health and vigour.

Mr. Winder, in response, said he had two feelings; one of thankfulness and great gratitude to the members of the Institution for giving him the presentation, and the other of sadness at the fact that he had to retire. He realized that among the subscribers were some whom he had known for many years and who, in the passage of time, had forgotten his shortcomings, and others, the newer juniors, who had not had time to learn his limitations.

Vote of Thanks

Mr. H. H. Brown (Exeter) said it was his privilege to propose a hearty and sincere vote of thanks to all who had contributed in any way to the success of the meeting. They were particularly glad to welcome the representatives from overseas, especially so as the difficulties of transport and accommodation must have been very real to them. They were also indebted to Ministry of Works, Superintendent of the Castle, Windsor, Institution of Civil Engineers, Wandsworth and District Gas Company, Lines Brothers, Gas Light and Coke Company, General Electric Company, Ltd., Windsor Royal Gas Light Company, ladies and gentlemen assisting in the conduct of the meeting, the contributors to "The Gas Industry Overseas: 1939-45," Authors of Papers, scrutineers of the ballots, the Officers, Auditors, Council, and Committees of the Institution, and the Secretary and Staff of the Institution.

Mr. O. P. Cronshaw (Rhyl) seconded and said they were particularly indebted to the Secretary and his staff for the great amount of work they had done.

Dr. Braunholtz, responding, said he would like to take the opportunity of saying how deeply disappointed they had been in organizing the meeting to have had to curtail the number of tickets available for nearly all of the functions. It was not done cheerfully, and it was a very difficult matter. They had tried to organize the meeting on the pre-war scale; everybody wanted it that way, but pre-war facilities were just not there. They had had to be content with doing their

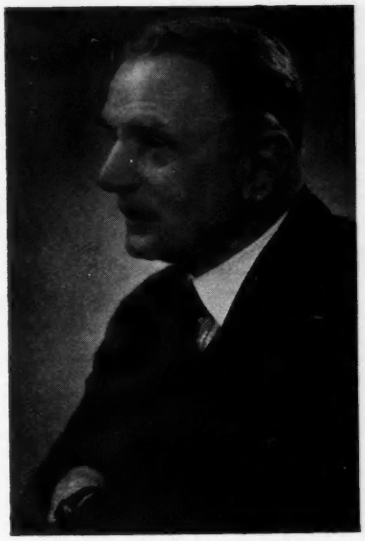
best, and he thanked all those members who had been disappointed for the very understanding way in which they had received their disappointments. This was the first real peace-time meeting in the sense that it was a four-day meeting with works visits and other functions. Of those members of the staff who were with him before the war there was only one left, and it would therefore be realized that most of the organization had been done by people who were doing so for the first time, and he paid his tribute to their enthusiasm and their efficiency.

M. A. Baril, of the French Gas Association, and Col. H. Zollikofer, of the Swiss Gas and Water Association, associated themselves with the expression of thanks for a successful meeting, and referred with pleasure to the fact that the Council of the International Gas Union had unanimously elected Colonel Croft as President of the Union.

Presidential Certificate

Mr. G. C. Pearson, President-Elect, presented Colonel Croft with the Presidential Certificate. The retiring President, he said, was a man of delightful personality coupled with true business instincts which had allowed the meetings to be taken forward in good form. Every man had had his due and there had been no irritation. The Council meetings had also been conducted with the greatest courtesy and celerity, and in view of the business they had got through he felt a record had been established at that meeting. The President was also a man of great engineering ability and had the courage to introduce into his own works plant that had not been tried in this country before. He was very helpful to any other undertaking that might require information, and he would like to acknowledge the help he had been to him quite recently. His help was substantial because his methods of running the plant were such that he had information, diagrams, and statistics running over periods of years.

Colonel Croft, in reply, thanked the Council of the International Gas Union for the great honour they had passed on to him personally and in turn to the Institution of Gas Engineers and to all its members in electing him President for the next three years. It was a great honour and he would do his best not only to serve the Union but to make the name of Britain stand out as it should among the other



Mr. G. C. Pearson, Institution President 1946-47.

engineering countries of the world. He thanked Mr. Pearson for his remarks and assured him that in succeeding to the Presidency he would find it was a year of a certain amount of responsibility and a certain amount of time must be given up. But whatever energy he might put in would be rewarded a hundredfold. It would be a year he would never forget, and one in which they wished him the greatest good fortune and happiness. He (Colonel Croft) was not likely to forget his own year of office as President, but he was glad to have the certificate to pass on to his grandsons as a token of the fact that his efforts had been appreciated.

THE INSTITUTION ANNUAL MEETING

"Lock, Stock and Barrel"—Mr. Shinwell

SOME 280 members of the Institution, kindred Institutions both at home and overseas, Government Departments, universities, and other public men were present at the President's Luncheon at the Savoy Hotel on June 4. The President, Colonel C. M. Croft, was in the chair, and the principal guest was Mr. Emanuel Shinwell, Minister of Fuel and Power.

Following the loyal toast, the PRESIDENT proposed the toast of "The Guests," coupling with it the name of Mr. Shinwell. He said it was a great pleasure to welcome for the first time for many years, so many friends from overseas, and it was an honour to the Institution to have the company of the Minister of Fuel and Power, important representatives of His Majesty's Government, and men of undoubted and almost unprecedented standing. They also had with them members of the universities, a fact which incited them to greater effort because they realized that in their Industry there was room for research and great endeavour. They welcomed members of kindred learned societies, particularly Sir Peirson Frank, President of the Institution of Civil Engineers, not only because he presided over the oldest of the professional Institutions but because he was a great personal friend. Among the overseas visitors they had delegates from Belgium, Canada, Czechoslovakia, Denmark, France, the Netherlands, Norway, Sweden, Switzerland, and the United States. He hoped that the Minister's temporary absence from his Department would not result in any reduction in coal output. They congratulated themselves on his presence, and so long as he treated them as the most economical users of coal in the interests of the nation they would wish him well, and they hoped that the output of coal would be satisfactory to the nation and to him as the Minister.

Mr. E. SHINWELL, responding to the toast, said it might console them if he conveyed the information that during his absence from his Department in the past six or seven days the coal output had increased, but he begged them not to suggest that that indicated any intention on his part to vacate office, although one could never tell what might befall him. He joined in cordially welcoming representatives from the United States, both for themselves and because of the great nation they represented. They were our gallant partners in a great and might adventure on behalf of civilization, an adventure which was the more happily successful because of their efforts, without which success might not have been achieved. There were representatives from Belgium and from Canada, our sister country no longer regarded as a dominion but as a sister country ranking in equality with Great Britain; from Czechoslovakia, now emerging from the trials, tribulations, and vicissitudes of the war; from Denmark, who were old and valued friends, even though they occasionally asked for more coal than we could afford to give them; from France, a France about to be revived and resurrected and refreshed, and taking a rightful intellectual place in the councils of the nations; from Holland and the Low Countries, which had their contribution to make; and from the Scandinavian countries, where they found some of the best friends of the United Kingdom. He also understood some Russian representatives were present, and he welcomed them because of the need for international co-operation and because he felt that the presence of Russian delegates at any conference held in this or any other country was very valuable.

Government's Intentions

So much for the facts. What about the hypothesis; in other words, what about the uncertainty that pervaded that gathering? What about their apprehensions? He understood there was some uncertainty among those associated with the Gas Industry about the future, which he could not understand. The intentions of the Government were well known, and furthermore they were honourable. They intended to take over the Industry lock, stock,

and barrel, but in the process to treat them with the utmost consideration. They had already given evidence of their solicitude in respect of the transfer of property from private to public hands as regards compensation. Some would receive more, and others less, and perhaps some would receive nothing, but there would be no injustice, and just as in the case of the compensation principles embodied in the Coal Nationalization Bill, so as regards the Gas Industry they would do all that was possible to ensure that there was justice and equity all round. The transfer of the Gas Industry from private to public hands was, in the judgment of the Government, inevitable. The Gas Industry, like the electricity industry, must become part of an integrated whole, an integrated and fully co-ordinated fuel and power industry, its several parts operating independently but not completely insulated. He was once a member of the Glasgow Corporation and at the same time a member of the gas and electricity committees, so he was not unacquainted with the subject, and in his view the several branches of the fuel industries should work not in competition but in co-operation, each making its own valuable contribution to the national economy.

He admitted—and the admission was not wrung from him, because it was based on historical fact—that the Gas Industry, taking it by and large, both municipal and private, had served the country well. It had been confronted for a long period by years of formidable competition, and latterly by a psychology which was sometimes even more difficult to face than economic fact, a psychology emanating from the emergence of electricity in the field not only of illumination, where perhaps it could not be contested, but as regards power and the like. The Gas Industry had faced those difficulties and that high-powered competition in his judgment with skill and ingenuity, accompanied by hard work. It had survived and would survive, but the question that was uppermost in the minds of technicians and administrators associated with fuel and power was whether the emergence of electricity would have the effect of reducing and weakening the Gas Industry of this country.

No Evidence of Failure

For many and obvious reasons the Gas Industry must be regarded as being as important as the electricity or any other industry of the country. But there must be adaptation; in the absence of adaptation death must ensue; adaptation was the essence of the case, and by adaptation he meant a readiness to respond to modern conditions and modern needs. He could detect no evidence that the Gas Industry had failed to respond particularly in the sphere of power supply, and taking the long view and having regard to the need for developing new industries in this country and the ability of the Gas Industry to respond adequately in the sphere of carbonization, he envisaged a great future for the Industry. There was in his mind no serious apprehension about that future, which could be ensured by nationalization, utilizing the technical and administrative skill which now ruled in the Industry. It was a new dispensation, he agreed, but the same skill, the same craftsmanship, and the same earnestness and integrity were essential. Whether the Industry was put under the big umbrella of private ownership or under the banner of national ownership the same people were essential, and it would be a very foolish National Gas Board that would refuse to avail itself either of the existing personnel or of the personnel of the future, that was likely to be more skilled in the technical sense because of the emergence of modern conditions.

He could not say what was going to happen in the Ministry of Fuel and Power ten years hence. He might have been forgotten by that time, though he intended to leave his mark, but certainly the Ministry ten years hence, not primarily responsible for the administration of the Gas Industry or electricity or coal, but exercizing a general supervision on behalf of the public would, he imagined, regard the Gas Industry as just an important a part of the triumvirate of fuel and power as coal itself. He recognized that the Industry was passing through great difficulty at the present time. There was difficulty about coal supplies, but he was not so alarmed about coal supplies as some people were. One might imagine from what one read in the newspapers that we were getting no coal at all. He assured them we were getting quite a lot of coal. In the last month, for example, when we were not troubled by holidays, we had succeeded, with a declining man power and, he might add, tired man power, for there was no young man power except as regards those juveniles who happily were entering the industry to a larger extent than for a long time past, principally due to the recruitment campaign and his own excellent propaganda activities—with all those adverse factors we had in the past month, taken week by week, managed to produce from deep mines 3,700,000 tons of coal and more than 200,000 tons from open cast operations. It was no mean achievement to have produced in the circumstances nearly 4,000,000 tons of coal. He did not mean that the position was satisfactory; far from it. It would never be regarded as satisfactory by himself or by the officials of the Ministry of Fuel and Power until we had reached the pre-war position of being able to satisfy all the requirements of internal industry and the export trade as well. It had nothing to do with politics; it was just commonsense.

Next Winter's Problems

We had got to get through next winter, and the Gas Industry was unlike the electricity industry, who were very kind to him and accepted all the inferior coal he liked to send them. It was not so with the Gas Industry. They were made of sterner stuff, and they wanted a grade and quality of coal which it was not always easy to procure. The Ministry were going to make an effort, and it might well be that the Industry would be able to render assistance to the Ministry in overcoming some of the difficulties in the supplies necessary for the Gas Industry so that the community might be assured of gas supplies in abundance. He hoped they would take it from him that he was firmly of the opinion that all the wisdom about this matter did not reside in the Ministry of Fuel and Power. He invited them to come along with their ideas. They were willing to learn and anxious to co-operate with the Gas Industry in order to overcome the difficulties that beset them.

Whatever their political views might be and whatever their differences with the Government, there was one objective that was common to them all. He was speaking in the presence of friends from overseas, and he was not ashamed or afraid to say it. They wished them well and they wished their people well, but we were equally concerned about the future of our people. It could not be forgotten that great sacrifices were made by Great Britain in 1939 when we took our stand alone and apparently unaided, and we came through. We were now faced with a formidable task and beset with enormous difficulties. Those difficulties were not the making of the present Government, but were an inevitable legacy of which we must not complain, but which we must handle with such skill as they possessed. Those difficulties could be overcome in the interests of our people and in the interests of every other country also. A revived and resurrected industrial and commercial Great Britain could make a valuable contribution to the peace and prosperity of the whole world. That was our objective, to which every one of his hearers would subscribe, and to that end they must address all their efforts. He could give them the assurance that the Ministry of Fuel and Power would not be behindhand in seeking to reach that objective at the earliest possible stage, to put our industries on their feet, to raise production to the optimum, to improve the standard of living of the people, to utilize our resources to the full, to eliminate waste, and to integrate our industries and our economy for the national good so that social well-being could be promoted. He believed the Gas Industry could play its part in the search for that objective equally with other industries, and he would do all he could at the Ministry of Fuel and Power to co-operate with the Industry in that effort.

District Heating and Sludge Gas

Sir PEIRSON FRANK, President of the Institution of Civil Engineers, proposed the toast of "The Institution of Gas Engineers," and congratulated Colonel Croft on his successful year of office as its President. Judging from the mass of Gas Industry literature he had received he felt the incoming President was going to have difficulty in keeping up with the larger number of committees and the research work with which the retiring President had been concerned. In perusing the literature he had received from the Institution, two points had arisen. One was the subject of district heating, on which he had not found all the information he would have liked. He would be interested to know more about it because he had had to take on some study in connexion with housing schemes which might be forthcoming not far away. The Minister had told them he was anxious to have assistance in the production of anything that produced heat, and he suggested that the Institution might have regard to the production of gas from sludge, which was being done in some parts of the country in fairly large quantities. Many local authorities could dispose of what might be termed a by-product at a very reasonable rate, but such disposal involved the loss to the country of valuable commodities. The gas produced was some 40% richer as an illuminant than the gas they had for sale.

During the war he was given a little extra honorary duty as co-ordinating officer in connexion with repairs for the public utility services, and he expressed his gratitude for the help received from the members of the Institution in the Greater London region. They had an intensity of attack not equalled by any other similar community at any time. No public utility service suffered to a greater extent than did the Gas Industry, which had no fewer than 11,902 incidents in roads. They had representatives of the Gas Industry working with the employees of the other public utility services, and he owed a debt of gratitude to Mr. Robert Foot for the way in which he got the gas undertakings in the London area together. Two or three incidents would show what they had to tolerate. In the first heavy raid on Sept. 7, 8 and 9, 1940, the eastern end of London was very severely hit, so greatly that one borough was almost entirely without gas, and that led to the Londoners' Meal Service which the London County Council put into operation, and from that grew the British Restaurants. In the last two or three days of 1940 they had the great fire raid on London, and he would like

to pay tribute to the Gas Light and Coke Company for their foresight in installing valves and in seeing that they were shut off during the earlier part of that conflagration. If the supply had been left on there would not have been much of the City left. In another incident on the south side, in the area of Dr. E. V. Evans's Company, a large tar holder was ignited, and the tar flowed in a blazing stream for some 200 yards, in places 18 in. deep. In the President's own area he went to one incident soon after the bomb had fallen and was surprised to find that the repair party had come from Morden, the whole of the Wandsworth staff being similarly employed elsewhere on the district. Every large gas-works in the Greater London region was hit at one time or another. In coupling with the toast the name of the President-Elect, he wished Mr. Pearson a pleasant and peaceful year of office.

Mr. G. C. PEARSON, President-Elect, in responding to the toast, referred with pride to the number of members of the Institution who were also members of the Institution of Civil Engineers, and hoped the ties between the two bodies would strengthen with the passing of the years in view of the education scheme. The education scheme was being reviewed with the object of co-ordination with the other engineering Institutions, so that the maximum of the subjects in the earlier syllabus were on the same lines. That would enable a man to be trained first as an engineer, and decide at a later stage which branch of engineering he would follow. Referring to the proposer's remarks on the carbonization of sludge, he said they had not yet done anything on those lines at Birmingham but they were arranging with the drainage board to take 2,500,000 cu.ft. of marsh gas into their supply. The Institution was very proud of its history. Since 1865 prominent personalities in the Industry had given their time and effort to improve the professional status of the gas engineer, to the encouragement of research, and to the training of the future gas engineer. They were proud of their Charter, granted in 1929, and whatever the ownership of the Industry might be in the future, he could say that the Institution would guide the Industry in its proper channels in the same way in the future as it had in the past.

Mr. FRANK H. JONES, Chairman of Wandsworth and District Gas Company, briefly proposed the toast of "The President"—a good President, a good engineer, and a very good colleague.

The PRESIDENT, replying, said the proposer's words were another example of the constant kindness shown to him since he was young when he was associated with Mr. Jones's father. His work had been a pleasure; gas engineering had been an exciting profession, and he thanked Mr. Jones for his kindness.

An Alternative to Nationalization

The Heyworth Report

By G. M. GILL,

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THE Heyworth Report was undoubtedly unsatisfactory to the vast majority of the members of the Gas Industry, as among other things it dismissed the idea of the Industry itself carrying out its own integration. The Committee must have thought that the Industry had been too slow in the past, and have had insufficient confidence in a speedy carrying out of its own plans in the future.

But the Committee did not recommend nationalization. In fact, its recommendations were quite different from nationalization. Its proposals embraced the formation of ten independent Regional Boards, to be given powers by the Government to purchase with its own fixed interest Regional stock all present owners' undertakings under a compulsory purchasing scheme.

The only ways in which the Government came into the scheme were that: (1) The Minister of Fuel and Power was to appoint the Regional Boards, which would in turn appoint their own Executives; and (2) the Government was to have an overriding commission of ¼% per annum for guaranteeing the due payments of interest on the Regional stocks to be given in exchange for the present owners' stocks and shares and for municipal undertakings. Consequently the Government would not have to find one penny-piece to finance the Heyworth scheme.

Of course, the object of the Government's Commission of ¼% was to make these Regional stocks gilt-edged securities, and enable money to be borrowed by the Regional Boards for development purposes at the lowest possible rate of interest—*i.e.*, an expected rate of 3%. Thus, the considerable amount of money required for developing works, interlinking mains and so on, estimated at the modest figure of 30 to 50 million pounds, would become the smallest possible burden on the Gas Industry when reorganized.

The Heyworth Committee had evidently studied the effect of voluntary integration as exemplified by the work of some of the holding companies, and by such active gas companies as Sheffield, Newcastle-on-Tyne, Bath, Swindon, and, of course, the Gas Light and Coke Company and of certain other Companies; and had come to the conclusion that the past rate of integration was too slow, although it was clear that the Committee was impressed with the possibilities and with what had been done in various localities.

As was pointed out, it needed willing sellers to bring about any voluntary integration scheme, and these were hard to find at a reasonable price, so making integration slow and expensive, or certainly tending strongly in this direction. Accordingly, the Committee recommended compulsory purchase, but *not* by the Government. Indeed, it seems astonishing that so many have jumped to the conclusion that the Heyworth scheme recommended or embraced nationalization. It did nothing of the kind.

The Heyworth scheme must not therefore be confused with what at the present time is in the minds of the Government in regard to their nationalization proposals—that is to say, if the nature of the Coal Bill is any criterion of what is their intention in regard to other industries.

One strong point in the Heyworth scheme was the great value of competition between gas and coke and their other competitors—coal, electricity, and oil. This factor is, of course, of considerable importance, as nothing stimulates effort so much as competition. Thus, improvement in the competitive power of the Gas Industry would have of necessity a beneficial effect on the coal, electricity, and oil industries, to the benefit of the public and of industry generally.

The Heyworth Report recommended, among many other excellent proposals, an enlightened policy in regard to tariffs, in which respect the Gas Industry has been, in the opinion of a good many in the Industry, too conservative, and has therefore lost business to its competitors.

The Heyworth Report, which is undoubtedly an able document, contains much sound advice which the Industry would benefit by adopting, whether it were left to its own devices or nationalized. The writer believes, however, that the purchase of all the undertakings by the Regional Boards would be a problem of the utmost difficulty if reasonabeless and fair play are considered as these should be an essential part of the transfers to be made.

Thus, to quote one instance, the capitalization of gas undertakings varies from a maximum of, say, £3,000 per million cu.ft. sold to a minimum of *nil*. The former undertakings have of necessity to charge a high price for gas to cover capital charges, while the latter have no capital charges to meet. The difference between the two can be as much as 7.5d. per therm sold.

The former would quite reasonably want enough to redeem its high capital, while the latter would require the full value of the undertaking from the standpoint of fair treatment, and would not expect to be penalized for its strict economy and success in the past.

Due to this difficulty, holding companies have generally steered clear of both types of undertakings, and if Mr. Heyworth's Regional Boards wished to start with a clean slate and with a reputation for fair dealing, they would frequently find themselves in an awkward predicament.

For a number of reasons, of which the above is one example, the writer believes that a different scheme would bring about a better and more speedy result; and one which should prove satisfactory and profitable, both to the present owners of gas undertakings and to the Government, and, what is really more important still, to the 11 million consumers of gas who are, in other words, the public as a whole.

A Different Scheme

Following an experience of 44 years in the Gas Industry, the writer has in mind an Industry which would increase in size and prosperity more or less rapidly, and to the advantage of the general community as being of greater importance than existing owners, those working in the industry or the Government.

To carry out this development he would suggest a combination of the Government and existing owners. With this object in view he would propose that a Control Board should be formed, consisting of a full-time Chairman, with a full knowledge of the Gas Industry, and three highly experienced and energetic Gas Commissioners to organize and develop the Industry.

These appointments would be the subject of careful consideration by a Gas Personnel Advisory Board of three persons

recommended by the British Gas Council, and preferably of an age to disqualify them from taking an active part in the reorganized Industry. The actual appointments would be made by the Minister of Fuel and Power after consultation with the Advisory Board.

The Control Board would be given powers to develop the Industry on the following lines:

(1) They would decide which works—termed A—should produce gas, and which works—termed B—should be shut down and be supplied by other Works A, or, alternatively, by coke oven plant.

(2) The ownership of all gas undertakings would remain as at present.

(3) All new interlinking mains would be laid and paid for by a new organization termed the Grid Corporation, which would be financed by the Government or by others wholly or partly at the Government's option

(4) The Grid Corporation would be entirely controlled by the new Control Board, and would buy gas from owners of the producing works A and from coke oven plant, and would sell at a profit to the owners of the works B to be shut down.

(5) The Board would buy the gas as cheaply as possible by direct negotiations with the producing undertakings, and would sell it at a sufficient profit to cover all costs, including interest on capital, of the Grid Corporation, which would sell gas at the lowest practicable price to the undertakings whose works were shut down.

(6) If insufficient gas is procurable at a satisfactory price, the Board would build new works which would become the property of the Grid Corporation.

(7) The Board's responsibilities would include the development of the Gas Industry, and consequently if owners did not operate their undertakings efficiently and energetically and to the satisfaction of the Board, they would have the power to purchase such undertakings by agreement or at a valuation to be determined under under the Arbitration Act, 1889. Such undertakings would then become the property of the Grid Corporation in the same way as scores of companies' undertakings were compulsorily purchased by the municipalities by agreement, or failing that by arbitration, between 1870 and 1922 (See Evetts' Book on *The Administration and Finance of Gas Undertakings.*)

(8) A panel of Arbitration would be formed from which a single Arbitrator would be selected to settle any dispute such as the sale price of an undertaking, or terms on which gas should be bought from undertakings without works and sold by those producing the gas. Normally the whole of the business of buying and selling would be done by direct negotiation between the Control Board and the gas undertakings or coke oven plant owners.

(9) The undertakings or coke oven plant owners selling the gas would meter and compress it into the interlinking main or mains, and would be responsible for such compressing plant and its operation.

(10) The undertaking receiving the gas would meter it and operate its own holders and district of supply in the ordinary way. The only change would be that it would be a buyer instead of a maker of gas. Its works would be redundant, and the surplus plant and land saleable by its owners. It would receive no compensation for such plant, and the owners would be precisely in the same position as an undertaking which now shuts down its works and takes a supply in bulk.

(11) The undertaking making bulk gas would have increased responsibilities, and would be obliged to undertake these upon agreed terms, or in default thereof upon terms determined by arbitration.

(12) Under this scheme, therefore, the company and municipal undertakings would continue to operate as at present unless they fell out with the Control Board, when compulsory powers could deprive them of their undertaking at an agreed or independent valuation. Likewise holding companies would continue to operate as at present, and in their case some of their works would continue to make gas for their own towns and also for the Grid Corporation, while their other works would be shut down and would buy their gas.

Gradual Integration

In the writer's view it is against the interests of the Industry and of the community it serves that there should be approximately 959 works making the gas for consumers in England, Wales and Scotland. This becomes more obviously disadvantageous when it is realized that 197 of the undertakings are making 87% of the gas and 762 of the undertakings are making only 13%.

In this scheme large numbers of the works of the smaller and of some of the larger undertakings would be shut down each year until the interlinking mains would be spreading like tentacles through various parts of the country. The final result would be —and this would be taking place frequently from time to time— that the tentacles would meet, and there would then be two or more producing works supplying gas into the same section of bulk supply mains. This would then require co-operation between the two or more undertakings, to the advantage of the general scheme. These connected works would be able to help each other during breakdowns and summer repairs, or one or more might have a good peak load plant which would be of value to the particular area of supply. In course of time scores, perhaps hundreds, of these tentacles would join up, and there would then be a gas grid covering a large part of the country. The writer considers that gas for the Industry in the future should either be provided by modern coke ovens or by large and well-equipped gas-works, except in isolated districts where this would not be practicable or would be uneconomical. In the early days of the scheme many of the small and well-equipped works would provide a good deal of the gas, but gradually these too would be shut down.

A large works is not necessarily well situated or laid out, nor well equipped or well managed, and quite a number of these as a consequence would have no future in the scheme here envisaged. But comparing a large well-equipped and well-managed works with a well-equipped and well-managed small works, the former has considerable advantages over the latter for the reasons set out below :

Advantages of Large Works

Firstly, there is the question of staff. A large works of, say, 10 mill. cu.ft. a day capacity would, or should, have a first-class and highly qualified gas engineer in charge, with a fully competent assistant engineer.

The staff would comprise shift superintendents, chemists and mechanics, with a competent technical and commercial staff on duty during daytime hours. It can well afford such a complete staff ; in fact, it cannot afford to operate without such a staff.

The keeping of records and the costing of operations, of new work and of repairs and maintenance would be carried out by competent people. First aid arrangements, dressing rooms, canteens, etc., would be provided, so making employment in such works attractive to the employees.

In small works all such facilities as set out above are necessarily very much curtailed.

It may well be asked, What particular merit is there in making as much gas as possible in works with a capacity of 10 mill. cu.ft. a day and upwards? The question of staff employed in such works has already been dealt with. Accordingly, the other reasons, or some of these, are set out below :

(*a*) Such large works buy and use large capacity plant which per million cu.ft. per diem capacity is materially cheaper to buy than plant of smaller capacity.

(*b*) The cost of operating, that is in labour costs, is appreciably lower in large than small works. Large retorts, boilers, engines, exhausters, blowers and so on need less labour in proportion to size, and such labour is required for 24 hours a day and seven days a week.

(*c*) The cost of upkeep—and repairs and maintenance is a heavy item in gas-works—is appreciably lower per million cu.ft. made in large units both for materials and labour.

(*d*) Many types of plant become practicable and more than ever justified and economical in very large works which cannot be considered for smaller works. Examples are set out below :

(1) Mechanical handling of all materials on a complete scale.
(2) Installation of waste heat boilers to the maximum extent.
(3) Installation of mechanical stokers on boilers and—
(4) Use of economizers, superheaters and condensers on steaming plant.
(5) Installation of coal-blending plant and segregation of coke into two varieties : (*a*) ordinary, and (*b*) free burning.
(6) Manufacture of concentrated ammonia.

TABLE 1.—Cost of Gas into Holder—Five-Year Period 1934-38.

Cost per therm into holder.	Number of works shown under category of capacity in cu. ft. per day.					
	20,000,000 and over.	10,000,000 up to 20,000,000.	5,000,000 up to 10,000,000.	1,000,000 up to 5,000,000.	500,000 up to 1,000,000.	Below 500,000.
Below 3d.	8 = 72·7%	10 = 55·5%	12 = 30·8%	37 = 23·9%	9 = 8·1%	6 = 1·6%
3d. but below 4d.	3 = 27·3%	8 = 44·5%	20 = 51·3%	61 = 39·4%	36 = 32·4%	23 = 6·3%
4d. " " 5d.	—	—	5 = 12·8%	39 = 25·2%	39 = 35·1%	52 = 14·3%
5d. " " 6d.	—	—	2 = 5·1%	15 = 9·6%	21 = 19·0%	71 = 19·5%
6d. " " 7d.	—	—	—	2 = 1·3%	5 = 4·5%	62 = 17·0%
7d. " " 8d.	—	—	—	1 = 0·6%	1 = 0·9%	56 = 15·3%
8d. and over	—	—	—	—	—	95 = 26·0%
Total	11	18	39	155	111	365

The above table is copied from the Report on a Survey of the Gas Industry by the British Gas Federation.

(7) Use of detarrers prior to purification plant.
(8) Extraction of the maximum quantity of sulphur compounds from the gas.
(9) Recovery and refining of crude benzole.
(10) Dri-Gas plant at outlet of holders.
(11) Use of engineering repair shops to the fullest extent.
(12) Chemical laboratory on a complete scale both for regulating manufacturing methods and carrying out practical research work.
(13) Manufacture of road tar.

Apart from the above other practical possibilities exist, and will doubtless increase in the future.

Cheaper Costs in Larger Works

That costs are considerably cheaper in large works is shown to a marked extent in Table I, while such works could be considerably improved to produce even better results.

There are indeed, or should be, lower costs per therm of gas produced all along the line with large as compared with smaller works.

Next we come to the quality of the gas produced, and here the large works has many advantages in the skill of the complete staff employed, the full use of instruments of all kinds, a chemical laboratory complete in its equipment, and the employment of an organization to watch and correct all faults before these can affect the quality of the product. With very large modern plant it is not the rate of wages but the technical efficiency that matters. It therefore pays to employ well trained men, and to do a small minimum of work with unskilled labour.

The writer knows only too well from his own experience how practicable it is to maintain high standards and low costs in large works and how impracticable in small works.

Accordingly, for the above and other reasons, he considers that the manufacture of the great majority of the gas used in Great Britain should be carried out in works of large size.

A study of Table I illustrates very clearly the cheaper operation in large works, but those who compiled the figures pointed out that :

(1) These figures were based upon information supplied by the undertakings. There was consequently no guarantee that the basis was uniform in all cases, and therefore the figures must be considered as a general guide only.

(2) Small works sometimes produced cheap gas, but that in nearly all cases such works were near the coalfields.

(3) In the great majority of cases the works included in the Table were within 30 miles of large works producing cheap gas, and could therefore be supplied in bulk without the laying of long lengths of mains.

It will be agreed that the figures do definitely indicate that size of works is a factor of material importance if cheap gas is to be produced.

Disadvantages of Small Works

Some of these are managed in a meritorious manner by very keen, hardworking and skilful men, but against great difficulties. The almost complete absence of necessity of machinery and of any plant which can be described as "modern" makes the running of small works a difficult, if not sometimes a heart-breaking task.

There is virtually no modern plant which can be installed profitably in small works. With the exception of better refractory materials and of producers instead of direct fires in the retort house—and in a few cases continuous vertical retorts—the plant is the same as was in common use at the beginning of the century. Such works require more, or at least the same, amount of work as they did then, while the work is of a type which men to-day do not wish to do, nor will they do such work if there is any satisfactory alternative.

Some chemical apparatus can be bought to show the quality of the gas made, but no chemist can be employed to use the apparatus, and consequently reliable information is not available.

Costs in small works are much higher than in large works (see Table I), while the gas is almost invariably of materially lower quality.

In the writer's opinion there is no case for the continuation of such works where a bulk supply can reasonably be made available from modern coke oven plant, or from a good works of large size, except, of course, in isolated areas where there is no practical alternative.

The above comments refer to the .515 works making less than 50 million cu.ft. per annum in England, Wales and Scotland.

There are, then, 110 larger works, but still small, making over 50 mill. and less than 100 mill. cu.ft. per annum. Such works have advantages, but not many over those of smaller size. More, possibly 10% or so, will have continuous vertical retort plant, which in the majority of cases means that the quality of gas made is of relatively high quality. Even so, with continuous vertical retorts in small works, the units, that is, the retorts, are necessarily so large that fuel costs are generally high.

Possibly half of the total of 50 to 100 million works will have retort house machinery and coke screening plant, but apart from this there will be little to distinguish works of this size from those of smaller size.

We thus have approximately 625 of the total of 959 works in this country which are too small for modern conditions and for competing adequately with alternative fuels. At least, that is the opinion of the writer.

But there will always be exceptions, and a few can show surprisingly good results. These are usually due to exceptionally able managers.

The Medium Sized Works

These might be classified as those included in the 5th category in Table I.—i.e., those making over 500,000 and less than 1,000,000 therms per annum—approximately 100 to 200 mill. cu.ft. undertakings.

These number 111 works, and are sometimes models of their kind, with good and well-arranged plant. Some are well managed by men of considerable ability, with a wide general knowledge of works production, of distribution methods and of gas-selling systems which are energetically pursued. Such men are sometimes skilful also in the matter of accounts and business efficiency.

Further, there will also at times be found assistants of good all-round ability in undertakings of this size.

There are, however, many undertakings in this category to which the above does not apply, and in these the growth of gas sales has been more or less stagnant for many years, while the gas has been of variable quality, and too expensive.

Accordingly, in a minority of these undertakings much improvement could be made without much expenditure, and these could play an important and increasing part in a rearranged Gas Industry. In the remaining cases there would be good reasons for shutting down and taking a bulk supply.

Medium to Large Works

In Table I there are 155 works making over 1,000,000 and less than 5,000,000 therms per annum. Such works would make from 800,000 to 4,000,000 cu.ft. on a maximum day.

The smaller would have a strictly limited staff of technical men, but some of these, probably a considerable number, would be operating efficiently.

Many of the works would still be on the small side, with costs of plant, materials and labour for replacements and repairs a good deal more costly than in the really large works. A great deal of what the latter would and could have economically would be denied to the smaller.

There is, nevertheless, a substantial difference in all the factors of importance between the works which makes 800,000 cu.ft. and the one which makes 4,000,000 cu.ft. on the maximum day.

Accordingly, other things being equal, it is these larger works which should be selected as the producing works of the future, provided that the skeleton is there for practical development into the 10 million works in course of time.

It will be seen, therefore, that with future development in mind and using the summary in Table I for the purpose there are the large works in columns 1, 2 and 3, viz., 11, 18 and 39 respectively, or 68 in all. If now we add one half of those in column 4, viz., 78, or half of 155, we should then have 146 large works—some very large—to develop in the future, minus some which are unsuitable, and plus others which would be suitable in the smaller categories.

In 1944 statutory gas undertakings sold 1,737 million therms. Adding non-statutory undertakings, or 2.2%, this makes 1,775, plus 6% for unaccounted-for gas; this is equivalent to 1,881 million therms of gas made.

If we divide this figure by 250, we arrive at the estimated quantity of gas to be made on the maximum day, or 7.52 million therms. If we deduct from this total, say, 15% for gas supplied by coke ovens, we arrive at the total gas to be made in gas-works—viz., 6.39 million therms on a maximum day.

The above figures are based upon those contained in the Heyworth Report, where 1,000 cu.ft. is assumed to be equivalent to 5 therms. If we assume that 6% of all the gas to be made will be produced in works which are mostly more or less isolated, we must further reduce the above figure by 6%, making the quantity to be produced on the maximum day by gas-works in the scheme 6 million therms, or 1,200 million cu.ft. of gas.

As there would be 146 works to make this gas, it would amount to 8.22 million cu.ft. a day per works, or 8.65 if we assume, as the writer suggests is more likely, that the gas would average 475 B.Th.U. per cu.ft.

It would seem, therefore, that all we should require would be the equivalent of 146 large gas-works, plus existing coke ovens now, supplying gas for town use, to make all the gas we at present require except in the isolated areas in this country.

(*To be continued*)

Midland Counties Coke Association

The Eighth Annual General Meeting of the Midland Counties Coke Association was held at King Edward House, Birmingham. The Chairman, Mr. F. C. Briggs (Dudley, Brierley Hill and District Gas Company) presided.

Reviewing the year's work, Mr. Briggs mentioned the tonnages of gas coke produced by members each year, which it had not been permissible to print during the war. The figure had increased every year from 1,010,500 tons in 1939 to approximately 1,355,000 in 1945. During the year there had been one increase in the general level of coke prices amounting to 3s. 6d. per ton, making the total general increase in the Midland area since the outbreak of war 26s. 1d. per ton.

Merchants' Margins

On the subject of merchants' margins, he said: The story begins with the indisputable fact that the outbreak of the war and the standstill order in regard to prices caught us just about twelve months too soon. The fact that we had managed to get schedule prices fixed in detail at practically every gas-works, station, town and village throughout the whole of our extensive area (covering, as it does, no less than twelve counties) was very fortunate, and we cannot be sufficiently grateful to the Price Advisers for the time they gave us during the first two years of the Association's life in getting this done thoroughly at the start.

In spite of our good fortune in having our schedule prices fixed, we had not had time to make the adjustments we had wanted in prices. As the schedules got working it became quite obvious that there were anomalies in prices which could not have been anticipated. These anomalies did not always become apparent immediately, and when the war started we were not only dealing from time to time with such cases as they arose, but had made all our plans for a comprehensive review of the schedules following the establishment of the Coke Distributors' Branch and the fact that distributors had at last consented to take their full part in the scheme, and join us at the county price fixing meetings so that we could have the benefit of their knowledge of the distributors' angle of the trade when fixing prices. Those plans for review, particularly of merchants' margins of profit, had to be dropped when the war started because of the undertaking given to the Ministry not to raise any prices without their sanction. Certain alterations agreed before the outbreak of the war, but deferred for a few months for business reasons, were not permitted by the Ministry to be adopted.

Therefore, though we have been extremely fortunate in having had our own price schedules during the war, we have always had with us the problem of merchants' margins, and we must admit that the distributors' desire to get this matter settled on a fair basis was a perfectly legitimate one on their part. You already know that the matter was tackled by a Sub-Committee composed of the parties concerned, ourselves as gas coke producers, the hard coke producers, the factors and the merchants, and up to a certain point that is in regard to basic principles, net profit, standard allowances and standard increases, we reached after long and hard work, a measure of agreement which could be regarded as highly successful.

Great Opportunity Missed

The last time you were all here at a general meeting you confirmed the recommendation which that Sub-Committee had made in regard to margins. I then took the scheme to the Ministry of Fuel and Power, and they saw no reason why it should not be implemented, but they asked that first of all they should see specimen prices for 20 towns. We therefore chose 20 of the biggest towns, and had a meeting of the representatives from those undertakings, following which each one of them was to meet his local distributors, go into the scheme thoroughly, and agree with them upon a fair road haulage charge for the town.

Distributors, however, put forward haulage figures which, in some cases, were not acceptable because they had clearly not been calculated on haulage costs alone, but had included in the figure extraneous expenses, such as delay in loading at works, &c., which were chiefly due to war-time conditions, and in any case could not be admitted as part of the haulage cost, or this would have defeated the way in which the gross profit was to be built up. After careful consideration the Central Committee decided to advise the Distributors' Branch that they could not see any way in which these difficulties could be met and at the same time a fair haulage cost agreed which would form part of a price which was at the same time both a maximum and a minimum, and were therefore not at the moment prepared to go any further towards implementing the agreement. This is the position to-day in regard to margins. The Committee think that this is not the best time to fix margins, because undoubtedly shortage conditions of labour, transport and supplies put costs out of proportion to their true value. On the other hand, a very great opportunity has been missed.

Benefits of Programming

Mr. Briggs said most of the time and attention of the Central Office had again to be concentrated during the year on the programming of coke supplies. The Association had continued to programme coke supplies on behalf of the Ministry of Fuel and Power, and in the year under review the machinery of programming was used continually for the benefit of consumers and merchants, and of members who, temporarily or over longer periods, were embarrassed through shortage or surplus of coke. During the early part of the year the demand for coke continued to be very heavy indeed, and to strain all the resources of the Industry in the area, particularly as water gas continued to be made. By the end of the year, however, Service requirements started a steep downward curve, and that, with the mild autumn, eased the situation to a considerable extent in some places.

The scheme had provided the Association with a vast amount of detailed knowledge of coke business throughout the area, and had brought to light certain anomalies. In the past there did not seem to have been sufficient coherence about the coke trade. There were far too many instances of coke having been sent away from the point of production, at a loss to the producer, while other coke of a similar quality had been coming into that same area, also at a loss of revenue to some other producer. This was an uneconomic practice which should be corrected, and which could be now that it had come to light.

Other useful knowledge which they now had and which could at some suitable opportunity be extracted and used for the good of the Industry in general, was the varying degree to which the coke market had been developed between one locality and another. The programming scheme had brought many of the 2,515 members of the Coke Distributors' Branch into closer contact with the Association than might have been achieved otherwise, and the opportunity of helping many of them over their supply problems had had the result of making them better satisfied members of the Branch, which should be helpful later on.

Mr. Briggs then spoke of the increasing importance of the Solid Smokeless Fuels Federation, its potentialities, and the possible effect on future policy in regard to gas coke. He referred to the success of the Solid Smokeless Fuels Exhibition at the Royal Horticultural Hall, London.

Future Problems

In conclusion, Mr. Briggs spoke of the possible position of Coke Associations if Regional Boards come into existence. Whatever happened, the Gas Coke Industry in the Midlands would be found to be in good order. Their assets were many. One was the existence of their price schedules. All matters in connexion with coke prices throughout the area had always been referred by the Ministry to the Association, and nothing in that connexion had been settled without their knowledge. They were on good terms with those sections of the Ministry of Fuel and Power with which they came in contact, and appreciated their co-operation. They had a firm agreement on prices and sales regulations with their friends and competitors, the hard coke producers. They had a properly established Distributors' Branch comprising every distributor of coke. They had the nucleus, if and when they wished to use it, of a scheme for standardizing merchants' margins. They had retained in their own hands and successfully carried out the work of regulating supplies of coke. And in the work of their Technical Committee, coupled with the knowledge gained from their programming activities, they had in their hands, if they wished to take it, a splendid opportunity for future technical and commercial development. He then moved the adoption of the report and accounts for 1945.

Mr. C. M. D. BELTON (Shrewsbury), Chairman of the Technical Committee, in seconding the motion, gave a summary of the activities of that Committee during the year. He said the Committee was fortunate in its personnel, each member taking an active part in testing appliances, &c. He was glad to take the opportunity of acknowledging the great help received from the Birmingham Gas Department and from Mr. Pickering, who took charge of the laboratory tests of appliances under review.

The CHAIRMAN said the agreement constituting the Association was due to terminate at the end of the present year. On the proposal of Mr. W. G. S. Cranmer (Willenhall), seconded by Mr. A. G. Williams (Wolverhampton), it was decided that the agreement should be extended for a further period of five years.

The CHAIRMAN proposed a vote of thanks to the staff of the Association, and in particular to the Secretary, Miss Price, for loyal and efficient service throughout the vear. Owing to her marriage it would not be possible for Miss Price to carry on the Secretaryship on a full time basis, so that the question of the Secretaryship was at present uncertain.

It was agreed that a letter should be addressed to Miss Price wishing her happiness in her married life.

At the close Mr. A. G. WILLIAMS (Wolverhampton) thanked Mr. Briggs for his Chairmanship.

Gas Staff Association

The Annual Delegate Meeting of the Gas Staff Association was held on May 25 at the National Society, Great Peter Street, London, S.W.1. A total of 42 Branches were represented by 95 delegates from all parts of the country. Councillor W. E. Webb, J.P., was in the chair, supported by the Honorary Solicitor to the Association, Mr. Joseph Lilly, and members of the Council.

The CHAIRMAN welcomed the delegates as being a representative national gathering of gas staffs. He was sure that the prospective amalgamation with the Central Committee of Gas Staff Associations would have a good recruiting effect in the provinces. The Association had noted the drastic changes proposed in the Industry by the Heyworth Committee, especially with regard to regionalization, and was concerned with the prospective nationalization as affecting gas staffs. Representations had been made by the Association to the Minister of Fuel and Power on behalf of gas staffs, whose voice must be heard, if necessary, when the Bill for the transference of the Industry to public ownership was before Parliament. The General Workers' Unions and the Local Government Officers' Association were actively wooing gas staffs, but he was confident that a national association, catering for all gas staffs, was the logical and scientific approach to future effective organization.

Mr. H. J. ARNOLD, Acting General Secretary, gave the annual report. The year had been one of unqualified success and progress. The membership had nearly trebled during the year, and as a result of the prospective amalgamation, the membership of the national association for gas staffs should reach 10,000 by August. There were now over 60 branches of the Association, spread throughout the 12 regions of England, Wales and Scotland, and six regional councils were in existence. Branches were negotiating locally with managements, and regionally with the Federation of Gas Employers. Among the many matters negotiated were an excellent war bonus, and consolidation with salary, and the counting of all war bonus towards pensions.

Mr. T. R. Robson, General Treasurer, reported a balance of nearly £2,000.

The ratification by the delegates of the permanent appointment of Mr. H. J. Arnold as full-time General Organizing Secretary and Acting General Secretary was unanimous.

Amalgamation with the Central Committee of Gas Staff Associations to form the new British Gas Staff Association, as from June 30, was approved unanimously.

A resolution that the Association should register as a trade union, was submitted, but after discussion it was decided to agree in principle, but to refer the matter to the British Gas Staff Association before any action is taken.

The following officers were elected:—*Chairman:* Councillor W. E. Webb, J.P. (Gas Light and Coke Co.); *Vice-Chairman:* W. H. Davey (North Middlesex Gas Co.); *Treasurer:* T. R. Robson (Commercial Gas Co.).

A New Pipe Detector

We have received particulars of a new apparatus for detecting pipes laid underground at depths up to 30 ft. below the surface. This new apparatus has been developed by Cinema-Television Ltd., and is the result of experience gained by that firm during the war years in the production of land mine and bomb detectors.

The equipment is portable and weatherproof, has been built to withstand hard usage, and is simple of operation; and we are informed that under average conditions the detector will locate accurately to within an inch or two, 6-in. pipes and the like buried up to approximately 3 ft., and if an oscillator is used pipes can be traced even if buried to a depth of 30 ft. It is claimed that maintenance of the instrument is negligible, and that the whole outfit is thoroughly reliable.

The address of the firm is Worsley Bridge Road, Lower Sydenham, S.E.26.

Production-Efficiency Service

The difficulties of post-war production and administration of industrialists and manufacturers are being catered for by the Production Efficiency Service of the Board of Trade. Firms turning over from wartime work to post-war manufacturing may be experiencing many difficulties in reorganization for efficient production, particularly industrialists and manufacturers of specialized productions, and those who are expanding their own or entering into new trades, and who may need guidance in planning lay-out and general information.

Assistance will be given in establishing efficiency in such factors as lay-out, progression of operation, internal organization of stores and material, transport, production lines, packing and despatch, administration, statistics, accounting and costing, and oncost control, &c. The service will be free of cost, and available to any firm. The Birmingham office is:—Production Efficiency Service, Board of Trade, Waterloo House, Waterloo Street, Birmingham.

Scottish Juniors (Eastern District)

The Annual General Meeting of the Scottish Junior Gas Association (Eastern District) was held on May 25 in the Gas Showrooms, Dunfermline.

The President (Mr. J. R. Denoon) intimated that the Council had awarded the prize donated by Mr. James Jamieson, Engineer and Manager, Edinburgh Gas Department, for the best Paper given by a member during Session 1945/46 to Mr. J. A. Anderson, Cowdenbeath, for his Paper, "Steam Production and Utilization on a Small Works."

Office-bearers were elected as follows:—*President:* T. R. Sawers, Perth. *Vice-President:* R. Air, Cowdenbeath. *Hon. Secretary and Treasurer:* S. K. Patterson, Galashiels. *Hon. Transactions Secretary:* Miss E. Robertson, Perth. *Education Representative:* S. G. Melville, Edinburgh. *Librarian:* A. J. Doran, Edinburg. *Members of Council:* J. R. Denoon, Edinburgh (*ex-officio*); W. H. Carson, Edinburgh; W. Brown, Falkirk; Gillespie, Cardenden; Napier, Kirkcaldy; Anderson. Cowdenbeath. *Hon. Auditors:* E. L. Farquar, Wakefield; E. W. Alexander, Edinburgh.

Diary

June 14.—North of England Gas Managers' Association (Auxiliary Section): Half-yearly Meeting, Gas-Works, Stockton-on-Tees, 2.30 p.m., followed by visit to Ashmore, Benson, Pease & Co., Ltd.

June 15.—Scottish Junior Gas Association (Eastern District): Annual Outing, Edinburgh; visit to Ganton Gas Works.

June 15.—London and Southern District Junior Gas Association: Summer Visit to Bournemouth.

June 17.—London and Counties Coke Association: Finance Committee, 11 a.m.; Executive Committee, 11.30 a.m.; Central Committee, 1.30 p.m., Gas Industry House.

June 21.—Waverley Association of Gas Managers: Edinburgh, 10.30 a.m.

June 22.—Manchester and District Junior Gas Association: Ladies' Day. Morning, visit to Lancaster; afternoon, visit to Morecambe.

June 26.—Southern Association of Gas Engineers and Managers: Summer Meeting at Maidstone.

June 29.—Western Junior Gas Association: Summer Meeting, Torquay; Buffet Luncheon, Hollacombe Works, 1 p.m. Inspection of Works, 1.45 p.m. Motor Coach tour over Dartmoor, 2.30 p.m.

July 5.—Manchester District Association of Gas Engineers: President's Day: Visit to Bradford.

July 9.—British Gas Council: Gas Industry House, 2.30 p.m.

July 17.—Midland Association of Gas Engineers and Managers: President's Day: Visit to Worcester.

July 16.—British Standards Institution Annual General Meeting, Institution of Mechanical Engineers' Storey's Gate, S.W.1. 3.30 p.m. Lord Woolton in the Chair.

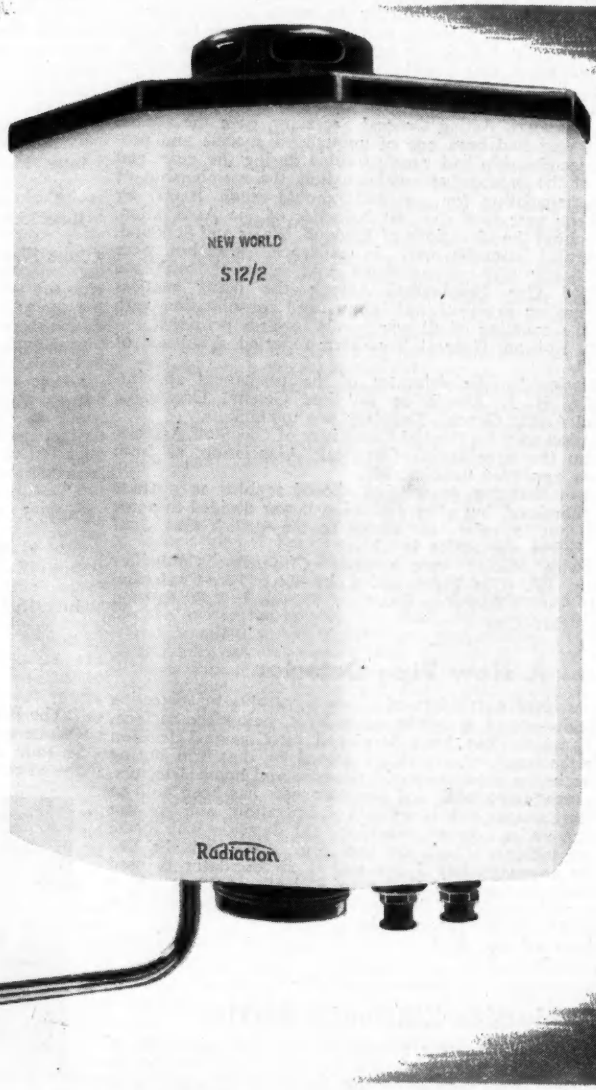
Gas Salesmen Visit Stechford

The Parkinson Stove Co., Ltd., recently entertained the Scottish (Western District) Gas Salesmen's Circle at their Stechford works. A tour of the factory was undertaken in the morning, and in the afternoon an enjoyable trip was made to Stratford-on-Avon.

In the photograph are included members of the Circle and officials of the Parkinson Stove Co., Ltd., grouped around one of the cooker assembly lines.

Glasgow Corporation has agreed to build all-gas temporary houses in the Hyndland district of the city, as the result of a suggestion made by the Department of Health for Scotland and the Ministry of Works, because of complaints from residents that smoke would be a nuisance. The houses will be supplied by the Ministry of Works and converted by the Corporation. Approval has also been given to the erection of the same type of house in a temporary housing site at Dowanhill Road, at Herriet Street and Leslie Street.

THERE'S A PLACE FOR THIS



FEATURES IN BRIEF.

Single-point-storage for supply to sink or basin.

For connexion to main or cistern supply.

Capacity 2¼ gallons maintained automatically at 140°F.

Patent Regulo Control.

Independent of fluctuations in water pressure.

White vitreous enamel finish.

Quickly and inexpensively fixed.

No condensate.

NEW WORLD

Insecticide Manufacturers

At the recent annual general meeting of the Association of British Insecticide Manufacturers, the following were elected as the Officers and Committee for the ensuing year. The offices of the Association are at 166, Piccadilly, London, W.1.

Chairman, T. A. Robertson (Plant Protection Ltd.); *vice-chairman,* H. J. Jones (Hemingway & Co. Ltd.); *hon. treasurer,* E. Z. Bolt (G. H. Richards Ltd.; *hon. auditor,* J. S. Mitchell (Murphy Chemical Co. Ltd.); *executive committee,* E. Z. Bolt (G. H. Richards Ltd.), R. A. Blair (Burt Boulton & Haywood Ltd.), J. R. Booer (F. W. Berk & Co., Ltd.), E. T. Buggé (Buggés Insecticides Ltd.), R. V. Craven (W. J. Craven & Co. Ltd.), J. E. R. Simons (Geo. Monro, Ltd.).

Conference on Pulverized Fuel

The Institute of Fuel is arranging a Conference on Pulverized Fuel, to take place in May, 1947. The object is to get together full up-to-date information on the preparation and use of pulverized fuel, including its advantages and disadvantages compared with other forms of fuel. It is hoped to cover the whole field, including steam raising, cement kilns, metallurgical and other furnaces, and details of developments in pulverized fuel practice, not only in this country, but in America, France, Germany, Australia, and elsewhere. The aim is to make available independent authoritative information on all aspects of pulverized fuel production and firing for the guidance of users and potential users of the system, and through the experience of present users to assist manufacturers in the development of design and pulverized fuel equipment. The Conference will also provide useful authoritative information for the use of the Ministry of Fuel and Power and the National Coal Board in their deliberations on the most efficient preparation of coal for the market.

The Conference Committee includes Dr. R. Lessing; A. T. Green (British Refractories Research Association); Dr. A. Parker, T. F. Hurley (Fuel Research Station); Professor D. T. A. Townend, F. B. Karthauser (British Coal Utilization Research Association); J. Ivon Graham (British Colliery Owners' Research Association); A. Grounds (Coal Industry Joint Fuel Efficiency Committee); Dr. W. A. Macfarlane, J. B. M. Mason (Ministry of Fuel and Power); Dr. E. S. Grumell (Fuel Efficiency Committee); Dr. E. W. Smith (President), Professor C. H. Lander (President-elect), and R. W. Reynolds-Davies (Secretary).

Millom (Cumberland) Gas Department is to increase the price of gas to consumers by 1d. per therm after the meter readings this month.

Tenders for £21,860 for the laying of gas mains have been accepted by Darlington Corporation. Two of the tenders are for a main leading to the North-Eastern trading estate at Aycliffe, and for mains within the estate. The contract is to be carried out by Messrs. William Press & Son, of London.

The Second Annual Stokers' Outing of the Cannock District Gas Company was held on June 1, when the stokers and water gas operators visited the works of W. J. Jenkins & Co., Ltd., Retford. The party was shown round the works and entertained to lunch. Mr. T. E. Parry, Engineer and General Manager, said that the trip was made possible by the co-operation of the yard men, who under the Works Superintendent had agreed to keep the plant going for 24 hours. In reply, Mr. R. M. Goodman, Managing Director of Messrs. Jenkins, pointed out that it was a good testimony to the modern design of the plant when it could be run for 24 hours without any of its regular operatives. Southwell Cathedral was visited on the return journey and the trip was greatly enjoyed.

Edinburgh Gas Department entertained Councillors, Members of Parliament, and friends on an official inspection to the city's Granton Gas-works, when Councillor Airlie, Convenor of the Gas Sub-Committee, acted as host. Conditions over the past winter had been difficult, Mr. Airlie stated, and at times Edinburgh had had no more than 24 hours' reserve of fuel to maintain production. He thought Edinburgh had nothing to fear in any scheme of reorganisation and that their plant would be the basis of the distributive system in the South-East of Scotland. Already the city was servicing communities at considerable distance and had found them entirely satisfied with the supply of cheap pure gas. This policy would undoubtedly be developed. Coal costs continued to be a problem and had doubled between 1939 and 1946, whereas gas charges had risen only from 2s. 5d. to 3s. 1d. per 1,000 cu.ft. Praise was given to Mr. J. Jamieson, Engineer and Manager, and to his staff.

To Meet the Increased Demand for Gas, Blackburn Gas Committee has approved a proposal for the installation at Greenbank gas-works of water gas plant at a cost of £35,000.

Because of Increases in wages and cost of materials, Aspatria (Cumberland) Gas Light Company is to increase the price of gas to consumers by 5d. per 1,000 cu.ft. from the June quarter.

Approval in Principle has been received from the Ministry of Fuel and Power to the installation of six beds of horizontal retorts of 1,250,000 cu.ft. capacity per day at the Chesterfield gas-works. The Gas Committee has also decided to build a large new gasholder at the Whittington works.

A Well-Produced Brochure has reached us from Whiteley-Read Engineers, Ltd., describing their range of products. These include steel chimneys, all types of tanks, metal stairways, bunkers and—of particular interest—conveyors and elevators in which the driving mechanism is completely enclosed.

The United Kingdom Gas Corporation has left its offices at Swettenham Hall, near Congleton, Cheshire. In future, all correspondence and enquiries should be sent to Bridgewater House, 60, Whitworth Street, Manchester 1. Telephone: Central 8121 (6 lines).

One Hundred Years Old Last Week, Middleton (Lancs.) gas undertaking, formed as the Middleton Gas Company and now under the control of the Corporation, celebrated the event by opening the works to public inspection after the Mayor (Councillor Mrs. C. Fletcher, J.P.) had declared the week open and formally toured the Department's premises. Special cookery demonstrations were given in the showrooms daily by Mrs. E. Baron and light refreshments were served.

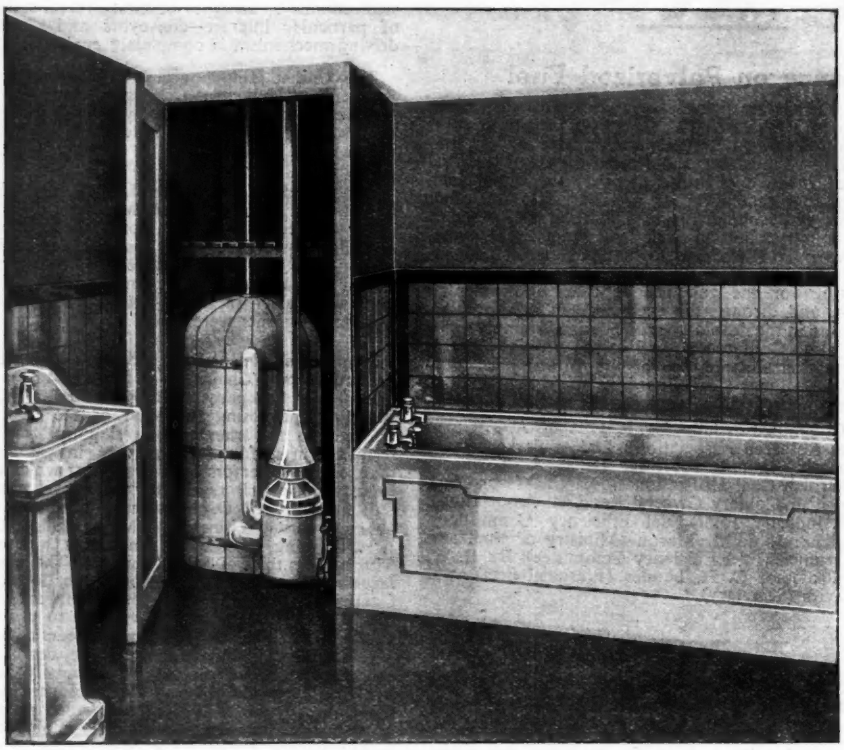
Employees' Benefit for 1945 was distributed by Mr. R. Wilson Bartlett, Deputy Chairman, at a dinner of the staff of the Newport (Mon.) Gas Company. Mr. R. S. Snelling, General Manager and Secretary, proposing the toast of the Chairman and Directors, referred to the energetic development policy of the Company resulting in a four-fold increase in gas sales since 1938, and thanked the Directors for the support which they had given to the Industrial Council regulating wages and conditions. Mr. G. M. Gill and Mr. C. O. Lloyd responded for the Directors in the absence, through illness, of Major Julian Day, Chairman. Mr. J. H. Canning, toasting the employees, welcomed six of them each with no less than 50 years' service. The employees, he said, had faced many emergencies but had never let down the public or the Company. Mr. J. F. Rust, responding, said the Company's proud record of 120 years' service was due to private enterprise and the excellent spirit of co-operation between Directors and employees. Mr. H. Haley, joining in the response, described the present Board as the most broad-minded the Company had had for 50 years. Mr. Snelling explained that the employees' benefit was secured by the Company in its 1938 Order, which provided for the sharing of benefits between consumers, employees, and shareholders. Excess Profits Tax had prevented earlier distribution, but it was hoped the benefits would continue in future.

Gas Undertakings' Results

Bombay Gas Company.—The revenue account shows a profit for the year ended Dec. 31, 1945, of £115,746, which with the balance brought forward and interest on bank deposits and investments makes a total of £122,133. The Directors point out in their report that all dividends must be paid with deduction of income tax at the standard rate, and the previous system of crediting Dominion income tax relief in respect of dividend distribution must therefore cease. Accordingly, they recommend a final dividend of 6½%, less tax, leaving £20,550 to be carried forward. This recommendation, together with the interim dividend of 3½%, less tax, paid in November, is practically equivalent to the distribution of previous years. Gas sales in 1945 totalled 1,026,588,200 cu.ft., compared with 1,035,846,000 cu.ft. in the previous year.

Plymouth and Stonehouse Gas Light and Coke Company.—Net profit for the year ended Mar. 31 was £28,378, compared with £12,145 for the previous year, the increase being due mainly to the fact that no allocations were made to deferred repairs fund and war damage insurance fund, which took £14,000 and £3,000 respectively in 1944-45. The Directors will recommend to the annual meeting on June 27 the payment of final dividends of 2⅞% (actual) on the Ordinary stock, making 5¾% for the year; 9s. per share on the Additional shares, making 16s. 6d.; and 8s. 6d. per share on the New shares, making 15s. 6d. for the year, all less tax, leaving a carry-forward of £56,166, against £55,697 brought in.

All Houses require constant hot water



To be an asset in the modern home the Circulator must be an appliance which is neat and compact in design yet capable of supplying hot water cheaply and operating automatically, economically and safely.

In designing the "Meteor" Circulator these points have been fully considered and the time spent in experimenting and testing all the components of this heating unit under all circumstances has resulted in the production of a highly satisfactory appliance.

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GAS PRODUCTS PRICES—STOCKS AND SHARES

The London Market

June 11.

Prices of the majority of Coal Tar products are controlled either by Government Order or by agreements.

The following are controlled by Government Orders:—

Road tar, 5½d. per gallon filled into buyers' tanks at sellers' works, with corresponding prices delivered and supplied in packages. The price sprayed direct on to roads is controlled by agreement at 8½d. per gallon for full tanks loads in London and adjacent counties.

Creosote for hydrogenation is based on 5.875d. per gallon and creosote for timber preservation on 5½d. per gallon *ex* sellers' works, with the usual extras for different qualities, packages, &c.

The basic price for cresylic acid is 3s. 6d. to 5s. per gallon, according to grade.

Hot pressed naphthalene costs £11 11s. in bulk *ex* distillers' works. Prices for refined naphthalene vary from £20 15s. per ton for crystal on 50-ton contracts to £26 15s. per ton for ball and flake. These prices are delivered England and Wales in 2-cwt. bags, minimum 4-ton lots.

Coal tar naphtha, 1s. 11d. to 2s. 11d. per gallon maximum. Xylol, 3s. 3½d. to 3s. 6d. per gallon delivered buyers' address in minimum 1,000-gallon lots in bulk. Pure toluene, 3s. 2½d. per gallon in bulk *ex* sellers' works.

Controlled by agreements:—Pitch for briquetting, 70s. per ton *ex* sellers' works in bulk. Phenol, 9½d. to 11½d. per lb. in large returnable drums delivered buyers' address, according to quantity.

The Provinces

June 11.

Average prices of gas-works products: Pitch, 70s. per ton; toluole, naked, North, 90's, 2s. 4d. to 2s. 6½d. per gallon; pure, 3s. 2½d. Prices for carbolic acid 60's, anthracene, creosote oil (hydrogenation), coal tar oils (timber preservation, &c.), and strained anthracene oil are controlled by S. R. & O. 1943, 1538, and for naphthalene by S. R. & O. 1944, 1051. Prices for road tar were increased by a half-penny per gallon by S. R. & O. 1945, 229, under which Order there was also an increase of 5s. per ton in the price for standard creosote-pitch mixture.

The bulk of the pitch produced in this country is required for home trade purposes, but certain quantities are being sent at higher prices to Allied countries with the approval of the Coal Tar Control. So far as creosote is concerned the bulk is required for essential purposes, at controlled prices. With regard to hydrocarbon oils, the prices remain fixed, although there is more freedom than was previously the case.

Scotland

June 8.

Enquiries continue numerous and deliveries are well maintained. Refined tar*: Yield to the distiller is 5d. per gallon *ex* Works, naked. Creosote oil: Timber preserving quality,* 5½d. to 6½d. per gallon; hydrogenation oil,*, 5⅞d. per gallon; low gravity or virgin oil,† 7½d. to 7¾d. per gallon; benzol absorbing oil,* 6¼d. to 8d. per gallon. Refined cresylic acid* is 3s. 6d. to 4s. 6d. per gallon *ex* Works, naked, according to quality. Crude naphtha,† 7d. to 8d. per gallon. Solvent naphtha*: Basic maximum prices delivered in bulk, 90/160 grade, 2s. 10d. per gallon, and 90/190 Heavy naphtha, Unrectified, 2s. 0½d. per gallon; Rectified, 2s. 4d. per gallon. Pyridine†: 90/160 grade, 13s. per gallon, and 90/140 grade, 15s. per gallon.

* Price controlled. † Uncontrolled.

A falling off in general activity was seen in stock markets throughout the whole of last week. The clouded international outlook and the approach of the Whitsun holiday, coupled with the various sporting events of the week, all contributing towards this end. O.F.S. shares came into the limelight again for a short time, but the increased prices were not held. Despite the general conditions, the gilt-edged market maintained its former firmness, and elsewhere there were few alterations in the previous week's price levels.

There was quite a good turnover among gas stocks and shares, and quotations for the most part showed few changes, although there was a weaker tendency among some of the leading ordinary stocks. For instance, Gas Light units closed the week 6d. lower, and both South Metropolitan and Commercial showed small reactions. It will be seen, however, that the section was not without a few upward movements. The following were the changes compared with a week ago:—

OFFICIAL LIST.

Assocd. Gas & Water Undertakings 4 p.c. cum. pref.		19/—21/–	+–/6d.
Bournemouth 4 p.c. deb.		104—109	+2
Colombo 7 p.c pref.	xd	23/6—25/6	June 3
Commercial ord.		63 — 66	—1
Gas Light units		21/ —22/	—–/6
Do. 3¼ p.c. red. deb.		98—101	+1
Imperial Continental ord.		117—122	+1
Montevideo ord.		121—126	+1
Primitiva Holdings ord.		11/9—12/9	+–/3d.
South Metropolitan ord.		91½— 94½	—½
United Kingdom Gas Corpn. ord.	xd	21/6—22/6	June 3
Do. 4½ p.c. 1st cum. pref.		20/6—22/6	+–/6d

PROVINCIAL EXCHANGES.

Bath		113—115	+1
Hartlepool ord.		101¼—103¼	+¼
Liverpool 5 p.c. red. deb.	xd	103—108	May 27

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